

SMITHSONIAN INSTITUTION  
MUSEUM PROGRAMS AND RELATED RESEARCH  
(SPECIAL FOREIGN CURRENCY PROGRAM)

PROGRAM PURPOSES AND LIST OF GRANTS

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SMITHSONIAN FOREIGN CURRENCY PROGRAM

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Contents	<u>PAGE</u>
Introduction	1
The Global Nature of the Smithsonian's Charter	1
Cultural Programs as National Assets	1
The Smithsonian Foreign Currency Program	2
The Importance of Basic Research	2
Some "Useful" Results of Smithsonian Foreign Currency Program Grants	2
Program Accomplishments	3
The Importance of Consortia Grantees	3
Special Foreign Currency Program Appropriations and the U.S. Taxpayer	4
Scientific Review Under the Smithsonian Program	4
Fiscal Year 1977 Appropriation Request	4
Support for Cultural Programs	5
Program Prospects in Egypt, India and Pakistan	5
The Importance of Continuity of Funding	6a
The Third U.S. Contribution to the Salvage of the Temples of Philae	6a



MUSEUM PROGRAMS AND RELATED RESEARCH  
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PROGRAM PURPOSES AND LIST OF GRANTS

INTRODUCTION

The Smithsonian Institution's Special Foreign Currency Program administers, in a manner consonant with the Institution's global charter, "the increase and diffusion of knowledge among men," a program of grants in foreign currencies to United States institutions to conduct research projects in so-called "excess" foreign currency countries. These are Egypt, India, Pakistan, Poland, Tunisia, Burma and Guinea. The Smithsonian program supports research in Archeology and Related Disciplines, Systematic and Environmental Biology, Astrophysics and Earth Sciences, and Museum Programs.

This report does three things: 1) it describes the nature of the Smithsonian Foreign Currency Program; 2) it identifies the Program's goals for FY 1977; and 3) it lists grants made in FY 1975 and in FY 1976 through November 30, 1975.

Smithsonian grants are made only when the applicants have successfully fulfilled three essential requirements. These are the favorable recommendation of one of the Smithsonian's national scholarly advisory councils, the concurrence of the appropriate American embassy and host government overseas, and the completion of appropriate cooperative arrangements with host country institutions.

THE GLOBAL NATURE OF THE SMITHSONIAN'S CHARTER

The purpose of the Smithsonian Institution is "the increase and diffusion of knowledge among men." This quotation from the will of its founder, James Smithson, was made a part of the Institution's enabling legislation enacted by the Congress in 1846 which led to the eventual designation of the Institution as the custodian of the national collections.

The Smithsonian's first Secretary, Joseph Henry, implemented the charter through support of basic research and publication not only in Washington but through a global network of correspondents devoted to these same ends. At the same time, the Institution began to acquire substantial collections of biological and geological specimens and of archeological and ethnographic materials, derived both from its own research and from U.S. Government programs. The Institution continues to conduct research and education programs and to improve its collections. Today the Institution is acknowledged to be a major national resource for the study of natural and cultural history and to be without equal anywhere on earth.

The Institution is, through its own research and teaching programs as well as through collaboration with other institutions in the United States and abroad, seeking to enhance man's ability to cope with the ominous problems affecting his future. Such problems include limited supplies of energy and other natural resources, the degradation of man's productive and cultural environment, and the gaps between the industrial and developing nations. Mesarovic and Pestel in the preface to their volume, Mankind at the Turning Point: The Second Report to the Club of Rome, state the problems succinctly:

Two gaps, steadily widening, appear to be at the heart of Mankind's present crisis: the gap between man and nature, and the gap between "North" and "South", rich and poor. Both gaps must be narrowed if world-shattering catastrophes are to be avoided...

CULTURAL PROGRAMS AS NATIONAL ASSETS

The process of narrowing these gaps can be assisted by the world's museums as a part of the scholarly and educational community. The job is not only one of finding scientific and technical answers to agricultural and industrial problems, for example, but it is also one of assisting Americans and people everywhere to adjust peacefully to new limits.



Such a role for museums is already being recognized. The Smithsonian, along with other degree-granting and non-degree-granting institutions of higher learning in the United States, finds its international programs tallied regularly among diplomatic assets of increasing priority as the extensive aid and defense commitments of the United States of the last thirty years are modified. The importance of such international programs for diplomacy lies, of course, in the long-term, intimate collaboration of professional people of different cultures in efforts to solve problems of importance of their nations. The importance lies also in the development of people capable of creative work in the context of other cultures. Such collaboration contributes to closing the gaps between industrial and developing nations and between man and nature, and it endures despite the changing climate of relations between governments.

#### THE SMITHSONIAN FOREIGN CURRENCY PROGRAM

The Smithsonian employs Federal appropriations and other resources to support such programs of international usefulness. Among Federal funds of special value to this end are those received through the Special Foreign Currency Program appropriation process. Over the ten-year period from FY 1966 through FY 1975, the Institution received more than \$27,000,000 equivalent in excess foreign currencies. These funds were made available to United States institutions of higher learning, including the Smithsonian itself, for activities carried out in collaboration with similar institutions in the excess currency countries. Roughly speaking, the funds were divided between the natural sciences, \$10,742,000 equivalent, and cultural history, \$16,270,000 equivalent. Of funds devoted to cultural history, \$2,000,000 equivalent in Egyptian pounds were contributed on behalf of the United States to UNESCO's international campaign to salvage the ancient temples on the Island of Philae (in Egypt) inundated by Nile River waters controlled by the Aswan Dam.

The Smithsonian program is the principal source of excess foreign currency support for basic research carried out by United States institutions in the excess currency countries. The Smithsonian program contrasts with other Special Foreign Currency Programs in that the full responsibility for design and execution, as well as publication of project results rests with a scholar at a U.S. institution.

The Smithsonian program strengthens the research and training activities of collaborating institutions abroad, as well, because most projects directly involve host country institutions and scholars thus contributing to the integration of the worldwide scientific process and to narrowing the gap between the industrial and the developing nations.

#### THE IMPORTANCE OF BASIC RESEARCH

Basic research like that carried on by the Institution itself and by other institutions of higher learning with Smithsonian Foreign Currency Program support is important because it has been the basis of most technological advance over the past 200 years. The worth of such research is hard to measure project-by-project; it is easy to measure over an extended period of time. Applied research must rely on basic research to succeed and development of a useful industrial process or instrument rests just as certainly on sound basic research. In the words of Isaac Asimov in the introduction to The Greatest Adventure:

In fact, unless we continue with science and gather knowledge, whether or not it seems useful on the spot, we will be buried under our problems and find no way out. Today's science is tomorrow's solution--and tomorrow's problems, too--and most of all, it is mankind's greatest adventure, now and forever.

#### SOME "USEFUL" RESULTS OF SMITHSONIAN FOREIGN CURRENCY PROGRAM GRANTS

Some basic research projects which receive Smithsonian Foreign Currency Program grants provide examples of "usefulness" even if the "usefulness" is accidental. Some examples follow:

--The Utah State University study in Tunisia of the advance of the Sahara Desert at the expense of agricultural or grazing land is an example of a research design which is "useful." This study proposes to integrate data on the biology of the plants, animals,







and human populations in such a way as to assist the human populations to alter their use of the land and stop the advance of the desert. Research progress is satisfactory to date.

--The Southern Methodist University studies of the early history of man in Egypt's now uninhabited western desert is an example of a project demonstrably "useful" even if only by accident. The basic research plan is being competently carried out. But one accidental result has been the location of a large area, previously undescribed, with a vast subterranean water pool and with excellent potential for agricultural development.

--The University of Michigan at Ann Arbor is studying the snails of Africa in association with Ain Shams University in Cairo, Egypt, and with the Lowell University in Lowell, Massachusetts. The University of Michigan group seeks to describe the snails of the genus Bulinus well enough for Lowell University scientists to take the next steps and identify the vectors of the parasitic disease, urinary schistosomiasis, and to find a way to control these vector snails.

--The Smithsonian study of tropical lakes in South India revealed an inadequate command of research techniques among participating Indian graduate students. One American scholar consequently took it upon himself to develop a series of lectures addressed to these students to equip them to participate effectively in this and other limnological research.

--A Duke University Marine Laboratory-sponsored symposium in Yugoslavia in 1973 on the development of marine larvae, a sensitive pollution indicator, resulted in new research collaboration which so far has brought six Yugoslav scientists to Duke and sent four Americans to Yugoslavia.

#### PROGRAM ACCOMPLISHMENTS

Smithsonian grants have been made to 185 United States institutions in 29 states and the District of Columbia over the ten year period from FY 1966 to FY 1975. In FY 1975 alone, 303 American scholars from 63 United States institutions in 29 states and the District of Columbia received program support.

Publications known to have resulted from program grants totaled 915 at the end of calendar year 1975, up from 507 at the end of FY 1974.

More than 100 permanent research collections of biological, geological, archeological, and ethnographic materials have been returned to United States universities and museums as a result of research grants over the ten-year life of the Smithsonian program. A similar number of collections has been added to the research resources of the excess currency countries.

#### THE IMPORTANCE OF CONSORTIA GRANTEES

The benefits of the Smithsonian Program have been felt by a far larger number of United States institutions than the 185 mentioned above which were direct grant recipients. Three of these individual grantees have been major consortia incorporated in the United States to serve all major U.S. research and training programs in the fields of Indian and Egyptian studies and of Middle Eastern archeology. They are the American Institute of Indian Studies (AIIS) in Chicago, Illinois with 28 institutional members; the American Research Center in Egypt (ARCE) in Princeton, New Jersey with 30 institutional members; and the American Schools of Oriental Research (ASOR) in Cambridge, Massachusetts with 153 institutional members including three scholarly associations. Among consortia accomplishments with Smithsonian funding are research in India by 115 AIIS fellows from 43 United States institutions in 22 states and archeological field research by more than 260 senior scholars and more than 324 graduate students from United States institutions.

These consortia must be considered major United States national resources. They are the principal funding sources for the research and training of American specialists in these fields.



The consortia are of national importance also because they maintain a year-round, United States cultural presence in India and Egypt, and through ASOR with Cyprus, Iraq, Israel, Jordan, and Tunisia and because they have carried out scholarly collaboration with these nations even during times when political stress between governments has eliminated most other forms of cooperation.

#### SPECIAL FOREIGN CURRENCY PROGRAM APPROPRIATIONS AND THE U.S. TAXPAYER

An appropriation for this program does not add to the tax burden of Americans. The money appropriated for foreign currency grants comes from U.S. accounts of foreign currencies abroad established under the "Food for Peace" (PL 480) program through sales of surplus U.S. agricultural commodities in exchange for local currencies. Accounts greatly in excess of the projected normal U.S. needs are designated by the Treasury Department to be "excess foreign currency" accounts. They then become available through the Special Foreign Currency Program appropriation process for U.S. uses like scientific research.

Erosion of these accounts by inflation is in many cases dramatically reducing their value to the United States. Indian and Pakistani rupees have, for example, lost almost half their value since 1970. To fail to employ these funds for worthy United States programs before inflation effectively eliminates their usefulness is to waste public funds by default.

#### SCIENTIFIC REVIEW UNDER THE SMITHSONIAN PROGRAM

The Smithsonian's Special Foreign Currency Program provides a mechanism for American private sector institutions, such as universities, to make use of excess foreign currencies for the support of their own research programs.

The Smithsonian program considers proposals from any qualified American institution for research in fields of traditional Smithsonian competence. The program seeks the advice of experts in the specific area of science to be studied, and convenes annual advisory councils of senior scholars in the relevant program areas. The councils discuss and evaluate the proposals, taking into consideration the experts' opinions, and provide specific advice to the Smithsonian regarding the selection of projects for support and the priority among proposals recommended for support.

When foreign currency awards are made to support approved proposals, normal Federal contracts are executed with the American grantee institutions providing for full fiscal accountability. The Smithsonian audits each grantee's periodic financial reports and, where grantees maintain records abroad, conducts site audits to ensure that appropriate accounting procedures are followed.

Projects lasting more than one year are subject to annual review of scientific progress by the advisory councils before another year of funding is approved. In addition, Smithsonian staff scientists and program advisory council members visit projects in the field when firsthand scientific reports are considered necessary. Smithsonian policy requires that grantees publish scientific results and that scientific collections be readily accessible to the scholarly community.

#### FISCAL YEAR 1977 APPROPRIATION REQUEST

The Institution is requesting an appropriation to continue to employ foreign currencies in FY 1977 to support research and education programs of United States institutions in both the natural sciences and cultural history. By doing so, it will contribute to the maintenance and development of museum resources both in the United States and in the excess currency countries, to the maintenance of a beneficial cultural environment, and to the ability of this and future generations to cope with the awesome questions of survival.

Studies in the natural sciences which have received Smithsonian Foreign Currency Program support have included those concerning the shape of the earth, the changing structure of the continents, changing climates, and the character of the Earth's flora





and fauna over geologic time. Such studies are contributing to predictions of climatic change in years to come, of the occurrence of earthquakes, and to the discovery of potentially rich mineral and water resources.

Studies of man's cultural history supported by the Program have included those seeking the earliest fossil remains of man's early primate ancestors, archeological studies of the nature of prehistoric man and his evolving ability to manage his environment, and of the emergence of settled communities and complex civilizations which interacted and disappeared. Studies of present day societies and the management of their resources and their adaptation to change have also received Program support. It is proposed that such research continue to receive Program support in FY 1977 in the ceaseless quest for a better understanding of our world and of how to manage its limited resources.

#### SUPPORT FOR CULTURAL PROGRAMS

The Smithsonian seeks a renewed foreign currency appropriation to support other forms of cultural exchange as well, particularly those which will preserve man's cultural heritage and employ the creative works of all peoples to improve international understanding. To this end, Program funds will be employed: 1) to support the exchange of art exhibits like the Tunisian Mosaics exhibit circulated several years ago by the Smithsonian Traveling Exhibition Service, which reduced the cost of the exhibit to users in the United States thus making it available to small museums and universities which could not otherwise afford such a major exhibit; 2) to foster on an exchange basis long-term loans of basic collections of cultural materials of other peoples for circulation as exhibits and for study, thus overcoming deficiencies in museum materials available to Americans and, of course, to the people of the nations which take part in the exchange; 3) to enhance the programs of the American Association of Museums and their collaboration with the International Council of Museums (ICOM) for such things as the training of American curators and conservators abroad and for the training of museum professionals of other nations as well; 4) to support the study of the problems of the preservation of historic objects and sites and to contribute in appropriate measure to the work of preservation of major historic monuments, like those of Nubia in Egypt, which are acknowledged to be essential elements in the heritage of all peoples; and 5) to support the exchange of performing artists, documentary films and current literature in translation.

#### PROGRAM PROSPECTS IN EGYPT, INDIA AND PAKISTAN

Prospects are good for successful new programs in the three excess currency countries where substantial accounts remain, i.e., Egypt, India and Pakistan. In Egypt, the American Research Center in Egypt continues to seek most of its research program support from the Smithsonian Foreign Currency Program. In addition, the University Museum of the University of Pennsylvania, Southern Methodist University and the University of Michigan have requested additional funding for important research. Egyptians welcome collaboration with American scholars, and new proposals seeking funds for research in archeology, biology, and astrophysics have been received for which a new appropriation is essential.

In India, newly established Indo-U.S. Joint Sub-Commissions on Science and Technology and on Education and Culture are planning programs which promise to reestablish the flow of scholars interrupted several years ago. In the meantime, however, the American Institute of Indian Studies (AIIS), which has received most of the funds for its fellowship and research programs from the Smithsonian in recent years, continues to receive the approval of the Government of India for the work of American scholars in that country. The program of the AIIS has been devoted to research in the social sciences and the humanities, but it has recently circulated an invitation to United States institutions seeking applications for studies in the natural sciences as well.

In Pakistan, the climate for collaboration has been excellent and new avenues of exchange are being explored vigorously by American institutions of higher learning. Projects currently receiving Smithsonian support include those studying the fossils of man's early primate ancestors and the ancient Indus River Valley civilization with its still undeciphered writing and its likely interchange with the civilizations of Mesopotamia and the Nile Valley. Additional archeological projects have been postponed for lack of funds.



## THE IMPORTANCE OF CONTINUITY OF FUNDING

The Smithsonian Foreign Currency Program appropriation has been sufficient in the past to provide funding only on an annual basis for most of its grantees. Multi-year funding, the standard practice of other Special Foreign Currency Program agencies, has been undertaken by the Smithsonian when it was essential to protect investments in successful projects against the contingency that some excess currency accounts would be exhausted. This happened in Ceylon, Israel, Morocco, and Yugoslavia.

The FY 1977 appropriation request seeks funds to ensure completion of projects, including multi-year projects, in Poland and Tunisia where the excess currency accounts will soon be exhausted. If sufficient funds are appropriated, it is proposed that demonstrably successful projects in other countries also receive multi-year funding.

The very nature of field research expeditions in the excess foreign currency countries requires such continuity of funding. Sensible planning by the United States grantee institution and by the host country collaborator involves the advance commitment of professors and graduate students, as well as of facilities. The larger objectives of the participating institutions depend on the advance disposition of such resources.

In addition, multi-year funds are requested to assist the consortia to meet their ongoing responsibilities for successful research projects and for fellowships. Their memberships look to them to provide the uninterrupted research opportunities which are fundamental to the conduct of their graduate programs as well as to the maintenance of an American community of scholars knowledgeable about these critical areas of the world.

## THE THIRD U.S. CONTRIBUTION TO THE SALVAGE OF THE TEMPLES OF PHILAE

The Smithsonian is seeking funding for the third of four annual contributions, each of \$1,000,000 equivalent in Egyptian pounds, initially requested in FY 1974 to help preserve the temples on the Island of Philae which have been inundated by Nile River waters regulated by the Aswan Dam. The \$4,000,000 total contribution to the Philae project would represent the final United States' contribution to the International Campaign to save the Nubian monuments which was initiated in 1960 by UNESCO.

The Smithsonian proposes to make this third payment available to the Government of Egypt rather than, as before, through the UNESCO trust fund to the International Campaign. One clearly workable procedure would involve a Smithsonian grant to the American Research Center in Egypt (ARCE) which in turn would enter an agreement with the Government of Egypt's Antiquities Organization. The ARCE membership embraces the most distinguished Egyptological expertise in the United States which would be charged with monitoring and reporting on the archeological aspects of the Philae Temple salvage. The ARCE accountant would provide on-site monitoring of accounts and the financial reporting. Smithsonian staff would periodically scrutinize these reports and project progress as well.

The program to safeguard the Egyptian monuments has always been under the direction of the Government of Egypt. Only the International Campaign to raise funds for this purpose has been a matter for UNESCO. Funds deposited in UNESCO's trust fund are transmitted to the Government of Egypt in response to that government's requests based on work schedules, cash flow requirements, and financial reports which are the responsibility of the Egyptian Antiquities Organization. A Smithsonian contribution made to the Government of Egypt would, therefore, comply with the terms of PL 93-559 prohibiting payments to UNESCO.

The International Campaign to save the monuments of Nubia was initiated by UNESCO at the request of the Governments of Egypt and the Sudan. In 1960, the Congress in Public Law 86-472 asked the President to recommend a United States contribution. President Kennedy responded on April 6, 1961, that he considered it "to be in the interest of the United States to assist in rescuing these historic remains of a former civilization from destruction..."





The total cost of the program to salvage the monuments on the Island of Philae will probably exceed \$16,000,000 in convertible and local currencies. As of December 31, 1974, some \$9,522,060 have been received or pledged, of which \$5,514,304 have actually been received. Since that date, an additional amount of \$2,114,540 has been received. Egypt has undertaken to meet one-third of the project's total cost.

The salvage plan, adopted with the advice and concurrence of an American engineer, provides for a coffer dam to be erected around the Island of Philae to permit the lowering of the water for the removal of the temples. They are to be re-erected on the nearby island of Agilkia, in a setting like the original one, where they will be higher and safe from further erosion by the river and accessible to all.

The Government of Egypt has sought the advice of the United States in the course of the Nubian Campaign, inviting experts to sit on the scholarly panels concerned with the salvage of Abu Simbel and Philae, for example.

The United States representative on the Archeologists and Landscape Architects Committee for Safeguarding the Philae Temples reports that work was continuing to progress satisfactorily when he last visited the site in November, 1975. The archeological studies on the Island of Philae, begun a year ago when the island first was freed of water, were about half completed. Removal of the temples has begun. The identification, transportation, storage, and protection of the stones was proceeding in what he considers an exemplary manner.

Time lost in earlier phases of clearing the new site for the temples on the adjacent island of Agilkia is being regained. Project directors are managing both the archeological and engineering aspects of the work well so that the project is not significantly behind schedule.



SMITHSONIAN INSTITUTION  
MUSEUM PROGRAMS AND RELATED RESEARCH  
(SPECIAL FOREIGN CURRENCY PROGRAM)

SUMMARY OF OBLIGATIONS ACTUAL AND ESTIMATED

FY 1975, FY 1976, TRANSITION QUARTER AND FY 1977

Obligations of Funds by Program Area  
(dollar equivalents)

		<u>Estimated Obligations</u>		
	<u>FY 1975</u> <u>Obligations</u>	<u>FY 1976</u>	<u>T.Q.*</u>	<u>FY 1977</u>
Archeology and Related Disciplines	\$1,946,843**	\$845,140	--	\$3,319,720**
Systematic and Environmental Biology	708,654	211,303	30,000	618,814
Astrophysics and Earth Sciences	212,905	19,651	--	415,931
Museum Programs	261,656	16,317	--	200,600
Grant Administration	100,339	30,589	--	10,000
Transfer to NSF--Science Information Program	--	83,000	--	--
Total	\$3,230,397**	\$1,206,000	\$30,000	\$4,565,065**

Obligation of Total Program Funds by Country  
(dollar equivalents)

	<u>FY 1975</u> <u>Actual</u>	<u>FY 1976</u> <u>Estimate</u>	<u>T.Q.*</u> <u>Estimate</u>	<u>FY 1977</u> <u>Estimate</u>
Burma	\$ 36	\$ 368	\$ ---	\$ ---
Egypt	1,369,305**	358,108	---	2,376,220***
India	445,950	498,273	---	948,400
Pakistan	200,674	11,796	---	462,500
Poland	424,500	61,855	10,000	393,145
Tunisia	<u>789,932</u>	<u>275,600</u>	<u>20,000</u>	<u>384,800</u>
Total	\$3,230,397**	\$1,206,000***	\$30,000	\$4,565,065***

\* Transition Quarter

\*\* Includes payments of \$1,000,000 equivalent excess Egyptian pounds for the salvage of the Temples of Philae

\*\*\*Includes \$83,000 equivalent transferred to the NSF Science Information Program



Museum Programs and Related Research  
(Special Foreign Currency Program)

FISCAL YEAR 1975 - ACTUAL OBLIGATIONS

Actual Obligations by Program  
(dollar equivalents)

	<u>Research Projects*</u>	<u>Research Development</u>	<u>Total</u>
Archeology and Related Disciplines	\$1,925,611**	\$21,232	\$1,946,843**
Systematic and Environmental Biology	654,138	54,516	708,654
Astrophysics and Earth Sciences	206,445	6,460	212,905
Museum Programs	<u>252,714</u>	<u>8,942</u>	<u>261,656</u>
TOTAL FOR RESEARCH	\$3,038,908**	\$91,150	\$3,130,058**
SFCP Grant Administration			58,843
Transfer to State Dept. for "Shared Administrative Expenses"			<u>41,496</u>
GRAND TOTAL			\$3,230,397**

Actual Obligations by Country  
(dollar equivalents)

	<u>Grant Administration and Agency Transfers</u>	<u>Research Projects*</u>	<u>Research Development</u>	<u>Total</u>
Burma	\$ -	\$ -	\$ 36	\$ 36
Egypt	1,800	1,359,305**	8,200	1,369,305**
India	96,631	311,306	38,013	445,950
Pakistan	435	170,211	30,028	200,674
Poland	-	411,125	13,375	424,500
Tunisia	1,473	786,961	1,498	789,932
TOTAL	<u>\$100,339</u>	<u>\$3,038,908**</u>	<u>\$91,150</u>	<u>\$3,230,397**</u>

\*These projects are described in the narrative.

\*\*Includes \$1,000,000 for preservation of Philae Temples.





Museum Programs and Related Research  
(Special Foreign Currency Program)

FISCAL YEAR 1976 - ACTUAL OBLIGATIONS as of 11/30/75

Actual Obligations by Program  
(dollar equivalents)

	FY 1976 (5 months)		
	<u>Research Projects*</u>	<u>Research Development</u>	<u>Total</u>
Archeology and Related Disciplines	\$ -	\$ -	\$ -
Systematic and Environmental Biology	2,771	4,532	7,303
Astrophysics and Earth Sciences	2,851	-	2,851
Museum Programs	7,817	-	7,817
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TOTAL FOR RESEARCH	\$13,439	\$4,532	\$17,971
SFCP Grant Administration			-
Transfer to State Dept. for "Shared Administrative Expenses"			<u>20,589</u>
GRAND TOTAL			\$38,560

Actual Obligations by Country  
(dollar equivalents)

	<u>Grant Administration and Agency Transfers</u>	<u>Research Projects*</u>	<u>Research Development</u>	<u>Total</u>
Burma	\$ -	\$ 368	\$ -	\$ 368
Egypt	-	2,408	-	2,408
India	20,589	2,844	-	23,433
Pakistan	-	1,464	4,532	5,996
Poland	-	6,355	-	6,355
Tunisia	-	-	-	-
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TOTAL	\$20,589	\$13,439	\$4,532	\$38,560

\*These projects are described in the narrative.



Museum Programs and Related Research  
(Special Foreign Currency Program)

ESTIMATED OBLIGATIONS - FISCAL YEAR 1976 AND TRANSITION QUARTER (TQ)

(December 1, 1975 thru September 30, 1976)

Estimated Obligations by Program  
(dollar equivalents)

	<u>FY 1976 (7 months)</u>			<u>TQ</u>
	<u>Research Projects</u>	<u>Research Development</u>	<u>Total</u>	<u>Research Projects</u>
Archeology and Related Disciplines	\$ 840,140	\$ 5,000	\$ 845,140	\$ -
Systematic and Environmental Biology	198,200	5,800	204,000	30,000
Astrophysics and Earth Sciences	11,100	5,700	16,800	-
Museum Programs	<u>8,500</u>	<u>-</u>	<u>8,500</u>	<u>-</u>
TOTAL FOR RESEARCH	\$1,057,940	\$16,500	\$1,074,440	\$30,000
SFCP Grant Administration			10,000	
Transfer to NSF for "Science Information Program"			<u>83,000</u>	
GRAND TOTAL FOR FY 76			\$1,167,440	

Estimated Obligations by Country  
(dollar equivalents)

	<u>FY 1976 (7 months)</u>				<u>TQ</u>
	<u>Grant Administration and Agency Transfers</u>	<u>Research Projects</u>	<u>Research Development</u>	<u>Total</u>	<u>Research Projects</u>
Egypt	\$ -	\$ 349,500	\$ 6,200	\$ 355,700	\$ -
India	93,000	377,340	4,500	474,840	-
Pakistan	-	-	5,800	5,800	-
Poland	-	55,500	-	55,500	10,000
Tunisia	<u>-</u>	<u>275,600</u>	<u>-</u>	<u>275,600</u>	<u>20,000</u>
TOTAL	\$93,000	\$1,057,940	\$16,500	\$1,167,440	\$30,000



Museum Programs and Related Research  
(Special Foreign Currency Program)

FISCAL YEAR 1977 - ESTIMATED OBLIGATIONS

Estimated Obligations by Program  
(dollar equivalents)

	<u>Research Projects</u>	<u>Research Development</u>	<u>Total</u>
Archeology and Related Disciplines	\$3,293,720*	\$26,000	\$3,319,720*
Systematic and Environmental Biology	595,814	23,000	618,814
Astrophysics and Earth Sciences	394,931	21,000	415,931
Museum Programs	190,600	10,000	200,600
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TOTAL FOR RESEARCH	\$4,475,065*	\$80,000	\$4,555,065*
SFCP Grant Administration			10,000
			<hr/>
GRAND TOTAL			\$4,565,065*

Estimated Obligations by Country  
(dollar equivalents)

	<u>Grant Administration and Agency Transfers</u>	<u>Research Projects</u>	<u>Research Development</u>	<u>Total</u>
Egypt	\$ -	\$2,343,220*	\$33,000	\$2,376,220*
India	10,000	906,400	32,000	948,400
Pakistan	-	447,500	15,000	462,500
Poland	-	393,145	-	393,145
Tunisia	-	384,800	-	384,800
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TOTAL	\$10,000	\$4,475,065*	\$80,000	\$4,565,065*

\*includes \$1,000,000 for Philae.



STATUS OF SMITHSONIAN SFCP FUNDS  
(dollar equivalents)

	<u>FY 1975</u> <u>Actual</u>	<u>FY 1976</u> <u>Estimated</u>	<u>T.Q.</u> <u>Estimated</u>	<u>FY 1977</u> <u>Estimated</u>
Unobligated Balance, Start of year	\$1,326,000	\$ 334,000	\$34,000	\$ 24,000
Appropriation	2,000,000	500,000	-	4,481,000
Recovery of Prior Years' Obligations	238,000	406,000	20,000	60,000
Unobligated Balances End of year	<u>- 334,000</u>	<u>- 34,000</u>	<u>- 24,000</u>	<u>-</u>
Total Obligations	\$3,230,000	\$1,206,000	\$30,000	\$4,565,000





SMITHSONIAN INSTITUTION  
MUSEUM PROGRAMS AND RELATED RESEARCH  
(SPECIAL FOREIGN CURRENCY PROGRAM) - SFCP  
Fiscal Year 1975/Fiscal Year 1976 (Part-year)

List of Grants

ARCHEOLOGY AND RELATED DISCIPLINES

The study of archeology, anthropology, and related fields such as ethnology, is the study of changes in man's condition brought about by his environment, by cultural factors, including man's own inventiveness, and limited by his biology. Societies such as our own that are undergoing rapid change are subject to increasing pressures to accommodate new factors. These societies must look to studies of the long history of man as well as to studies of today's condition to find answers to such questions as:

- a) How have societies responded to similar pressures in the past?  
What are current options?
- b) What are those elements in our condition that are biological imperatives or are so culturally interdependent that we dare not change them? For example, is the family unit essential to the survival of our civilization?
- c) What are the pressures that a society must relieve, and what must be resisted in order to protect more critical matters?

Our ability to make conscious and wise decisions regarding the most pressing of today's social and environmental problems rests as much on the intelligent interpretation of man's past record and current condition as it does upon technological and social inventiveness.

The projects of United States institutions listed below, which received Smithsonian Foreign Currency Program support in FY 1975, contribute to an understanding of man's past record and current condition.

EGYPT

	<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
1.	SF3-11497 (FY 75) Amend. 4 & 5	American Research Center in Egypt, Princeton, NJ	J. Dorman	\$223,196 <sup>1/</sup>

The American Research Center in Egypt (ARCE) is a consortium of 20 United States universities and museums and over 500 individual scholars devoted to research and teaching about ancient and modern Egypt. The ARCE is an unique national resource because it is the principal source of money on an annual basis supporting in the United States the advancement of knowledge and understanding of ancient and Islamic Egypt as well as the training in Egypt of area specialists. Moreover, the ARCE has served the U.S. national interest by

<sup>1/</sup>Total for following parenthetical amounts (items 1a through 1s).



sustaining active scholarly collaboration between the U.S. and Egypt during periods of political stress when other contacts have been interrupted. SFCP support of the ARCE has totalled \$2,678,000 equivalent in Egyptian pounds over a ten year period for the support of 37 research projects. Projects receiving new funds in FY 1975 are listed below (items 1a through 1s).

<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
a.	Operation of the Center in Cairo, Egypt	J. Dorman	(\$26,161)
Smithsonian grants to ARCE have supported the Cairo Center which serves as an American scholarly presence in Egypt by maintaining a reference library and by sponsoring lectures and symposia which involve the entire scholarly community in Egypt. The Cairo Center also provides administrative support for its members' research by obtaining research and import and export permits, housing, supplies and personnel, and by keeping project financial records and publishing research results.			
b.	American Museum of Natural History, NY, NY	W. Fairservis, Jr.	(\$2,254)
Protection of the excavation site and archeological finds stored at Hierakonpolis, a major urban complex continually occupied from 4500 to 1500 B.C., being studied with the most sophisticated scientific techniques ever applied to this formative, but previously neglected, period of Egyptian history. Work on this site was interrupted by the Six Day War in 1967 but will resume in 1976-77.			
c.	City U. of New York	E.L. Ochsenschlager	(\$25,000)
Excavation of a 2500-year old Greek and Roman-occupied site at Taposiris Magna, which shows clearly defined, undisturbed strata or chronological layers, promising new evidence for the dating of Greco-Roman materials in Egypt.			
d.	Claremont Graduate School Claremont, CA	J.M. Robinson	(\$28,293)
Conservation and preparation for publication of the "Nag Hammadi Codices," papyrus scrolls containing texts of early Christian gnostic character similar to the "Dead Sea Scrolls" but of a slightly later period, providing information about the religious and intellectual ferment during the time Christ lived.			
e.	Detroit Institute of Arts	E. Peck	(\$2,125)
Research on the "decorative arts" of ancient Egypt, such as faience and glass figures, grooming articles, and jewelry, which were more susceptible to outside influence than the "major arts" of sculpture and architecture, to reveal the extent to which artistic styles of the Aegean and Near East influenced Egyptian artisans.			



<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
f.	Harvard U. Cambridge, MA	M. Mahdi & D. Gutas	(\$28,208)
Preparation of a descriptive catalog of Arabic philosophical manuscripts in the Egyptian National Library, the study of which is essential in the documentation of the continuity of Western thought.			
g.	New York U.	B. Bothmer	(\$15,090)
Preparation of a catalog documenting 150 previously-unpublished ancient Egyptian statues found at Karnak early this century by the late Georges Legrain.			
h.	New York U.	B. Bothmer	(\$9,926)
Consultation on the installation and completion of a museum of ancient Egyptian art at Luxor, Egypt, which will exhibit, for the first time, artifacts from local archeological sites previously inaccessible to both scholars and the public.			
i.	New York U.	D.P. Hansen	(\$4,500)
Protection of the stratified port excavation site and archeological finds stored at Mendes, which incorporate Greek and Roman settlements dating from 300 B.C. to the early Christian era and which promise greater insights into the life of a Mediterranean port town in these and earlier times. Work on this site was interrupted by the Six Day War in 1967 but will resume in 1976-77.			
j.	New York U.	E. Stefanelli & B. Bothmer	(\$290)
Analysis of the scenes carved on Egyptian seventh century B.C. tombs using techniques of modern art history to provide a fresh picture of the history of ancient Egypt.			
k.	U. of California Berkeley, CA	H. Lesko & A. Keller	(\$5,009)
Research on the written material as well as excavated physical remains from the ancient Egyptian workmen's village at Deir el-Medineh to describe the life of the people of the village rather than the systems (economic, legal, political, etc.) under which they lived.			
l.	U. of Chicago	G. Hughes & D. Silverman	(\$6,993)
Comparison of non-literary hieroglyphic texts, such as personal letters, with more formal texts to learn the sources of the spoken language of ancient Egypt.			





<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
m.	U. of Chicago	K. Weeks	(\$12,964)

Preservation by careful documentation of the rich epigraphic or inscriptional history of ancient Egypt carved and painted on the surfaces of its temples and monuments, at Luxor, before they are rendered irretrievable by erosion and vandalism.

n.	U. of Pennsylvania	D.B. Redford	(\$32,303)
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Pictorial reconstruction and scholarly interpretation of the temple of the Pharaoh Akhenaten, consort of the famous Queen Nefertiti, which was razed by his successors in an attempt to eliminate from Egyptian history this Pharaoh who believed in a single deity, by the matching of photographs of more than 30,000 building blocks carved and painted 3,300 years ago.

American Research Center in Egypt, Princeton, NJ	J. Dorman
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Fellowship research in ancient and modern Islamic thought, history, and art funded in FY 1975 are listed below:

o.	California State U., Hayward	M. Dols	(\$2,960)
p.	Michigan State U.	S. El-Bayoumi	(\$5,300)
q.	New York U.	S. Peterson	(\$2,600)
r.	U. of Michigan, Ann Arbor	J. Berry	(\$9,020)
s.	U. of Pennsylvania	P. Pritchard	(\$4,200)
2. FR5-46240 (FY 75)	Southern Methodist U. Dallas, TX	F. Wendorf	\$54,620

Geological and archeological studies of the Egyptian desert to establish a chronology of environmental changes and of the appearance and development of early man. This study of the geological past has resulted in discovery of a great quantity of water available at shallow depth, which seems to be a useful source of water for modern agriculture.

3. TA75-228 (FY 75)	U. of Michigan, Ann Arbor	A. Ehrenkreutz	\$1,786
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The supply of money has always been a critical economic indicator. This project will estimate the volume of gold coinage in circulation during a critical period of the Islamic expansion by measuring the variation of coin dies produced between 800 - 1250 A.D.



<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
4. FR5-46239 (FY 75)	U. of Texas, Arlington	T.R. Hays	\$15,860

Excavation of a predynastic site (ca. 4000 - 3000 B.C.) in Upper Egypt, close to the present town of El Khatara, to test models of cultural change during the period when subsistence activities changed from food collection to food production providing the beginnings of the monumental civilization of ancient Egypt.

5. FR5-54002 (FY 75)	Wayne State U. Detroit, MI	F. Hassan	\$27,223
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Excavations of prehistoric sites in the Siwa Oasis region of the Western desert to study early agricultural life in an area where cultural forms of the Egyptian desert and of the Nile Valley overlapped in a period likely to have witnessed the climatic changes which led to the present arid conditions of North Africa.

6. FR5-46225 (FY 75)	UNESCO, Paris, France	Director General Maheu	\$1,000,000
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Contribution to UNESCO's international campaign to help save the monuments at Philae which include early Christian temples as well as Egyptian and Roman treasures that have been inundated by waters impounded between the two dams at Aswan and are being dismantled for transfer to a nearby island which is above the water level. This is the final phase of the campaign which has already rescued Abu Simbel and certain Nubian monuments.

## INDIA

7. SF3-00114 Amend. 3 (FY 75)	American Institute of Indian Studies Chicago, IL	E. Dimock	\$185,191 <sup>2/</sup>
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The American Institute of Indian Studies (AIIS) was founded in 1961 and today has a membership of 28 United States institutions. The AIIS is a unique national resource because it is the principal source of money on an annual basis supporting in the United States the advancement of knowledge and understanding of India as well as the training in India of area specialists. Moreover, the AIIS has served the U.S. national interest by sustaining active scholarly collaboration between the U.S. and India during periods of political stress when other contacts have been interrupted. Disciplines sponsored by the AIIS are increasing from the original concentration on social sciences and the humanities to include the natural sciences as well. Smithsonian support of the AIIS has totalled \$3,206,000 equivalent in Indian rupees over a ten year period.

<sup>2/</sup>Total for following parenthetical amounts (items 7a through 7d).



<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
a.	American Institute of Indian Studies Chicago, IL	E. Dimock	(\$81,554)

The principal activity of the AIIS has been the appointment of fellows. The SFCP currently provides most of the funds for this fellowship program. AIIS fellows receiving support during FY 75 are listed below:

Bowling Green State U. Ohio	D.D. Daye
California State U. Hayward	P.J. Claus
Colorado State U.	J.W. Boyd
Duke U., Durham, NC	P.H. Turney
Kansas State U. Manhattan, KS	K.W. Jones
Rutgers U. Brunswick, NJ	S.L. Maloney
U. of California Berkeley	D.G. Mandelbaum
U. of California Berkeley	D.T. Sanford
U. of California Berkeley	S.J. Sutherland
U. of California Berkeley	L. Hess
U. of California San Diego	J.A. Wallock
U. of Chicago	S.J. Blake
U. of Chicago	A.N. Sarkar
U. of Chicago	C. Wittmann
U. of Hawaii	B.J. Murton
U. of Hawaii	L.E. Rowell
U. of Illinois Champaign-Urbana	V.T. Oldenburg



<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
	U. of Illinois, Chicago	S. Anacker	
	U. of Illinois, Chicago	P. Hockings	
	U. of Illinois, Chicago	C.J. Hall, Jr.	
	U. of Michigan, Ann Arbor	S. Gordon	
	U. of Michigan, Ann Arbor	W.M. Spink	
	U. of Michigan, Ann Arbor	S. Reed Schastok	
	U. of Minnesota	G.J. Hoynacki	
	U. of Pennsylvania	S.S. Cohen	
	U. of Pennsylvania	R.J. Cohen	
	U. of Pennsylvania	S.P. Oleksiw	
	U. of Pennsylvania	D. Tonsich	
	U. of Virginia	P.J. Hopkins	
	U. of Virginia	W. Starosta	
	U. of Washington	H. Schiffman	
	U. of Washington	M.C. Shapiro	
	U. of Wisconsin, Madison	L.M. Ate	
b. FR4-60095 Amend. 4 (FY 75)	American Institute of Indian Studies Chicago, IL	E. Dimock	(\$55,000)

Another activity of the AIIS receiving Smithsonian funds is the Center for Art and Archeology at Benares, India. The Center was established to apply rigorous scholarly standards to the massive job of photographing and indexing the art collections and the temples and monuments of India which abound in every region of the sub-continent. The Center, established in collaboration with the Benares Hindu University, is contributing to sound priorities for research of India's numberless art treasures.

c. SF3-011638 Amend. 1 (FY 75)	American Institute of Indian Studies Chicago, IL	C.R. Jones	(\$3,758)
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Documentation for the first time on film and in a descriptive monograph of rapidly disappearing ritual art forms which are at least a thousand years old, casting new light on traditional cultural values and the changes they are undergoing.





<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
d. FR5-46228 (FY 75)	American Institute of Indian Studies Chicago, IL	J.F. Staal	(\$44,879)

Recording and documenting by film of a Vedic sacrifice, one of the most complex and ancient rituals of mankind, which after a continuous tradition of performances over some 3,000 years from which outsiders have always been excluded, may be the last celebration because of the gradual disappearance of qualified Brahmin scholars.

#### PAKISTAN

8. FR4-60112 Amend. 2 (FY 75)	American Museum of Natural History NY, NY	W.A. Fairservis	\$3,450
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Excavation of an Harappan site near Karachi to throw light on an ancient civilization which had a significant influence on South Asian history, concentration being placed on a village site, rather than on major cities previously studied.

9. FR5-46235 (FY 75)	Smithsonian Institution	C. Evans & G. Van Beek	\$46,728
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Research on ethno-technology revealing a rich but rapidly disappearing craft tradition in Pakistan dating back as far as 4000 B.C. Efforts are being made not only to preserve artifacts of these crafts but to promote the continuance of small craft industries and the production of handmade objects.

10. FR4-60111 Amend. 1 (FY 75) FR5-46236 (FY 75)	U. of California Berkeley	G.F. Dales	\$950 \$37,104
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Research into the paleo-environmental and archeological history of a 4000 B.C. coastal site in Pakistan illustrating that Balakot was indeed a seaport (now several miles inland) and that trade was carried on with Mesopotamia and the Persian Gulf. The boring of stratigraphic cores is determining the physical environmental situation in relation to the ancient coastline and may provide historical information directly bearing on present-day development schemes for harbors and coastal facilities.

#### POLAND

11. TA75-263 (FY 75)	U. of Louisville, KY	S. Jernigan	\$4,826
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Survey of current research being undertaken in Poland involving combined archeological and art history approaches to the cultural history of the medieval period in Central Europe.



<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
<b>TUNISIA</b>			
12. FR5-46231 & Amend. 1 (FY 75)	American Schools of Oriental Research, Cambridge, MA	J. Pedley & F. Cross	\$216,695

The American Schools of Oriental Research (ASOR) is made up of 150 United States institutions and three scholarly associations. The ASOR has provided, since its incorporation in 1900, most of the field training opportunities in the archeology of the Bible and of the Near and Middle East in general, which have been available to United States scholars and clergy. Four generations of Americans have felt the impact of ASOR-sponsored research as it enriched the accounts of the origins of western civilization and of the Judeo-Christian tradition presented at every level of secular and religious education in the United States. Despite the constant political turmoil which has afflicted the Near East in recent years, the ASOR has sustained uninterrupted collaboration with the scholars of the area by maintaining a year-round American scholarly presence in Jordan, Iraq, and Cyprus as well as in Israel and Tunisia. Smithsonian support of the ASOR has totalled \$807,000 equivalent in Israeli pounds and Tunisian dinars through FY 1975 to support seven archeological excavations in Israel and two in Tunisia over a nine year period.

ASOR is now engaged in the first modern archeological excavations at Carthage as part of a combined effort to reconstruct the history of the successive occupations of ancient Carthage (the Punic, or original inhabitants; the Roman conquest; the Vandal conquest; Byzantine; and finally Arab occupation) in an effort to salvage as much as possible of this important period of ancient history before the archeological remains are destroyed by the encroachment of the modern city of Carthage.

13. FR5-46232 (FY 75)	Dumbarton Oaks Center for Byzantine Studies Washington, D.C.	M. Alexander	\$107,982
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Descriptive and photographic inventory of the tile and stone mosaics from the Roman colonial period in Tunisia, leading to the publication of scholarly reference material making available a wealth of data on the social, religious and other cultural and artisitic aspects of life in Roman times.



## SYSTEMATIC AND ENVIRONMENTAL BIOLOGY

"Two gaps, steadily widening, appear to be at the heart of mankind's present crisis: the gap between man and nature, and the gap between 'North' and 'South,' rich and poor. Both gaps must be narrowed if world-shattering catastrophes are to be avoided..."

M. MESAROVIC and E. PESTEL, Mankind at the Turning Point: The Second Report to the Club of Rome, New York, Dutton, 1974, Preface, p. ix.

Smithsonian Foreign Currency Program grants contribute directly, if modestly, to narrowing "the gap between man and nature, and the gap between 'North' and 'South'...."

Such grants for basic research in systematic and environmental biology are devoted in every instance to narrowing "the gap between man and nature." Each must be carried out in an excess currency country, most of which are developing nations in the "South" as defined by Mesarovic and Pestel in Mankind at the Turning Point.

Projects like those listed below which received Smithsonian Foreign Currency Program support in FY 1975 and 1976 are undertaken by the professors and graduate students of United States institutions of higher learning who are trained in the most advanced research techniques. The majority of these projects are carried out in collaboration with the institutions, professors and graduate students of developing nations. As a consequence, such projects narrow the "gaps" described above in areas where scientific cooperation is all too scarce while studying scientific questions of importance to both the United States and the host countries.

<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
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### EGYPT

14. FR5-46226 (FY 75)	Southern Methodist U. Dallas, TX	B.H. Slaughter	\$9,665
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Recovery and analysis of fossil animals from the Egyptian Western Desert using new techniques to establish links with modern animal species and thus to contribute to an understanding of the development and extinction of living things and shed light on man's own development.

15. FR4-60114 Amend. 1 (FY 75)	U. of Michigan, Ann Arbor	J.B. Burch	\$2,000
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Research into the freshwater snails of Africa, including disease-carrying species, and into techniques for the control of the disease-carrying ones.



<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
16. TA76-56 (FY 76)	U. of Michigan, Ann Arbor	P. Gingerich	\$1,219
Study of fossils from the Cairo Geological Museum to trace the origins of the higher primates and man and thus shed light on man's development.			
17. FR5-46243 (FY 75)	U. of Wisconsin, Madison	O. Loucks	\$200
Synthesis of research data developed under the International Biological Program (IBP) on human adaptability in rural-urban migrations.			
18. TA74-251 Amend. 1 (FY 75)	Utah State U.	F.H. Wagner	\$500
Participation in the International Biological Program (IBP) sponsored Joint Egyptian - American Symposium on Arid Land Ecosystems, concerned with questions of desert formation and recovery of arid lands for agriculture.			

#### INDIA

19. TA75-137 (FY 75)	Miami U., OH	K. Mattox	\$1,494
Participation in the International Symposium on the Taxonomy of Algae held at Madras, India, concerned with basic research on underwater plants (algae), a basic component of all underwater ecosystems, some species of which are commercially valuable.			
20. SF3-00090 Amend. 2 (FY 75)	Smithsonian Institution	R. Higgins & G. Saunders	\$22,929
Study of the interdependence of living organisms in some tropical freshwater Indian lakes to develop principles of management of biological productivity in these lakes and to compare results with similar studies of temperate lakes in North America and thus contribute to understanding the processes of life in all bodies of freshwater.			
21. TA75-193 (FY 75) Amend. 1 (FY 76)	Smithsonian Institution	S.D. Ripley	\$11,443 \$88
Research on the migratory birds of India, both from the point of view of development of international conservation efforts and from that of the long distance transmission by birds of viruses and parasites harmful to birds and in some cases to man.			
22. TA75-115 (FY 75)	Smithsonian Tropical Research Institute Panama, CZ	J.B. Graham	\$560
Participation in the 26th International Congress of Physiologists in New Delhi, India to report on research on air-breathing fishes and their ability to survive under adverse conditions, which is part of the larger study of the evolution of the earliest animals from aquatic to terrestrial forms.			





<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
23. FR5-46243 (FY 75)	U. of Wisconsin, Madison	O. Loucks	\$7,125

Participation in an International Biological Program workshop, held in New Delhi, India, on the comparative biological productivity of temperate forests and tropical, monsoon forests, a topic of major interest to those seeking to maintain and increase the forest resources of the world.

#### PAKISTAN

24. TA75-261 & 262 (FY 75)	Hawaii Institute of Marine Biology	A. Banner &	\$6,623
Amend. 1 (FY 76)	Kaneohe, HI	D. Banner	\$1,464

Studies of the biology of the Alpheid shrimp, the most commercially valuable family of shrimp in Pakistan waters, to describe the varieties present and to contribute to development of plans to increase their numbers and thus to increase protein production from the Arabian Sea.

25. FR5-46223 (FY 75)	U. of Washington	R. Taber	\$69,779
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Research on the wild boar of Pakistan, and on natural ways to control its population and thus to limit its damage to agricultural crops, currently estimated at \$35,000,000 annually, without further endangering other animal species sharing the same habitat.

26. TA75-265 & TA75-299 (FY 75)	Yale U., New Haven, CN	A. Richard & S. Goldstein	\$ 5,577
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Studies of the Rhesus monkey in undisturbed habitats of the Himalayan mountain foothills in Pakistan to establish which environmental and other factors are significant to the conservation of these animals which are used extensively for medical research.

#### POLAND

27. TA75-24 (FY 75)	Harvard U., Cambridge, MA	A. Crompton	\$ 930
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Research on the unique Polish collection of fossil mammals from Mongolia from the Cretaceous period (more than 63,000,000 years old), particularly on tooth and jaw development, to establish factors that led to the development of mammals from reptiles which is part of the larger study of the evolution of the so-called higher mammals, including man.



<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
28. TA75-322 & TA75-210 (FY 75)	Oregon State U.	J.A. Wiens	\$7,297
Research on the sparrow species <u>Passer</u> , a group which lives off human populations in varying degrees, concerning the allocation of the birds' time among various activities such as feeding (grain), breeding, etc. which will help measure what the sparrows take from man's ecosystem.			
29. TA75-40 & TA75-197 (FY 75)	Smithsonian Institution	W.A. Oliver	\$3,304
Comparison of American and Polish corals of the Devonian period (more than 345,000,000 years old) to identify types of coral and thus gather evidence related to the movement of the Earth's continents.			
30. TA75-12 (FY 75)	Smithsonian Tropical Research Institute Panama, CZ	M. Moynihan	\$861
Research collaboration between scientists of the Smithsonian Tropical Research Institute (Panama) and of Poland on the biological productivity of tropical freshwater lakes contributing to understanding the processes of life in all bodies of freshwater.			
31. TA75-122 & TA75-264 (FY 75)	U. of California, Berkeley	W. Clemens	\$1,355
Research on the unique Polish collection of fossils, Mongolian and North American mammals from the Cretaceous period (more than 63,000,000 years old) for clues to the evolution of marsupials (opossums, kangaroos, and similar animals), to understand their origins, development and present concentration primarily in Australia, and to shed light on the shifting of continents since the Cretaceous period.			
32. TA75-338 (FY 75)	U. of Wisconsin, Madison	O. Loucks	\$1,470
Development of an international program to apply the techniques of analysis of natural ecosystems to lands being used for agriculture, in order to help maintain stable agricultural productivity.			
33. FR5-46243 (FY 75) 17 Trips (FY 75)	U. of Wisconsin, Madison	O. Loucks	\$14,275 \$27,520
Participation by American scientists in International Biological Program research on grassland and woodland ecosystems which is contributing substantially to man's understanding and management of these major productive elements of his world.			



<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
<b>TUNISIA</b>			
34. FR4-60091 & Amend. 1 (FY 75)	U. of Arizona	E.L. Cockrum	\$30,629
Research on genetic differences between small mammals (mice, rats, gerbils, etc.) of the Tunisian desert and the Sonoran Desert of the southwestern United States and on the parts these animals play in their respective desert ecosystems and thus to man's world.			
35. FR5-46230 (FY 75)	U. of California, Berkeley	J.A. West	\$3,716
Studies of various strains of green marine algae, a plant basic to life in the sea, to determine the environmental factors associated with each strain.			
36. FR5-46238 & Amend. 1 (FY 75) SF3-00113 Amend. 3 (FY 75)	U. of Colorado	P. Robinson	\$74,836 \$2,070
Study of Tunisian animal fossils, from 3 million to 20 million years old, to establish a timetable of changes in animal life in the area so that their geological deposits can be dated, and to establish a history of animal movements during the period which can be used for identifying long-term climatic and other environmental changes and which may shed light on the direction of such changes in our own time.			
37. FR5-46243 (FY 75)	U. of Wisconsin, Madison	O. Loucks	\$1,600
Participation by U.S. scientists in deciduous forest ecosystem studies in Tunisia under the International Biological Program which is contributing substantially to man's understanding and management of this major productive element of his world.			
38. FR5-46241 (FY 75) FR5-46222 Amend. 2 (FY 75)	Utah State U.	F.H. Wagner	\$108,246 \$107,522
A comprehensive study of the lands in Tunisia bordering the Sahara desert and their inhabitants, including man, in order to learn the natural and agricultural processes which are causing the desert to expand reducing productive agricultural land and in order to develop land use plans to assist in reversing the "desertization" process.			
39. FR4-60115 & (FY 75) Amend. 1 & 2	Smithsonian Institution	R.P. Higgins	\$130,612
Support for the Mediterranean Marine Sorting Center, a joint U.S. - Tunisian facility for sorting, classifying and distributing marine biological specimens from the Mediterranean sea for study by marine biologists around the world, thus facilitating the long-term process of comprehending the biology of this sea and how man's activities are degrading it.			



## ASTROPHYSICS AND EARTH SCIENCES

The study of astrophysics and earth sciences is the study of man's available energy and mineral resources. Studies of the stars and their origins reveal much about the origin, composition, behavior and fate of the Earth. The forces governing the stars are of course the same as those governing the star which is our Sun. The Earth was born of solar materials, and the Sun remains the source of all energy, fossil or otherwise, available to man today. Uranium, for example, which provides the fuel for atomic power plants, is present in the Sun as well as the Earth. Coal and oil are fossil remains of plants and animals which once relied on sunshine for life, just as all life does today.

Studies, like those listed below which received Smithsonian Foreign Currency Program support in FY 1975 and 1976, are contributing to a body of knowledge which is essential to satisfying man's future energy and mineral needs and to his understanding and prediction of earthquakes, for example, and will contribute to future space age developments of benefit to man.

Such projects help host nations, particularly the developing nations, improve their scientific output while providing United States institutions with collaborators, facilities or field research opportunities essential to the conduct of studies judged by the Smithsonian most likely to advance man's knowledge of his available energy and mineral resources.

<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
EGYPT			
40. TA75-248, 249, 250 (FY 75)	U. of Pennsylvania	H. Faul	\$6,790

Studies of the geology and time sequences of the "alkaline ring-dike" formations, which occur in the eastern desert of Egypt, to shed new light on the fundamental earth processes associated with the birth of the oceans and to develop guides for mineral exploration.

### INDIA

41. FR5-46242 (FY 75) TA76-48 (FY 76)	Smithsonian Astrophysical Observatory, Cambridge, MA	G.F. Weiffenbach	\$32,380 \$2,756
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Operation of the Smithsonian Astrophysical Observing Station at the Uttar Pradesh State Observatory, Naini Tal, India, the only satellite tracking station in the Smithsonian Astrophysical Observatory network located on the Asian land mass. This station makes possible observation of man-made satellites passing over South Asia. It employs tracking cameras and contributes to studies devoted to an understanding of the movement of the continents, the shape of the Earth, the nature of its upper atmosphere, and how these are influenced by the Sun and the other planets.





	<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
PAKISTAN - none				
POLAND				
42.	TA75-113 (FY 75)	Adler Planetarium Chicago, IL	R. Webster & M. Webster	\$1,000
Invitation to Dr. P. Czartoryski, noted expert on the history of medieval science, to participate in the Semi-Centennial Meeting of the History of Science Society and to consult on medieval scientific instruments with colleagues at several American institutions.				
43.	TA75-56, 73, 116,121,133 134, 142 (FY 75)	Louisiana State U.	R.D. Anderson and others	\$10,212
Participation of seven American mathematicians in a symposium organized by the Polish Academy of Sciences, devoted to modern theoretical mathematics at its best, which underlies, for example, studies of the forces governing the planets and the stars. This symposium concerned the mathematics which seeks to explain properties of a whole system in terms of known properties of small parts of the system.				
44.	FR5-46245 (FY 75) TA75-306 & Amend. 1 (FY 76)	Smithsonian Astrophysical Observatory, Cambridge, MA	E.M. Gaposchkin	\$130,422 \$95
Forces affecting the movement of continents and associated volcanic and earth-quake activity can be studied by monitoring the continental movements and the wobble of the Earth at the poles from observatories precisely located, not simply by latitude and longitude, which is a system tied to shifting continents, but by establishing its location in relation to the Earth's more stable center of mass. This collaborative study will establish this kind of location for a Polish observatory at Borowiec and permit substantial additions of data to studies of the Earth's dynamics.				
45.	SF3-011499 Amend. 1 (FY 75)	Smithsonian Astrophysical Observatory, Cambridge, MA	G.C. Weiffenbach	\$7,620
Support of a colloquium to devise and adopt common and precisely-defined reference coordinate systems to use in the place of latitude and longitude, which is a system tied to shifting continents, for the study of the Earth's dynamics, like the movement of the continents themselves, and to help standardize worldwide the study of astronomy and geodesy.				



	<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
46.	TA75-43 (FY 75)	Smithsonian Institution	K.M. Towe	\$182

Research on fossil Paleozoic graptolites, small, floating marine animals widely distributed around the Earth from about 350,000,000 to 600,000,000 years ago, whose evolution is important to dating rocks which are the source of oil and gas.

47.	FR5-46234 (FY 75)	U. of Chicago	D.N. Schramm	\$15,408
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The birth and death of stars and planets, like those of our own solar system, can be studied with the aid of computers. This study seeks to understand how the heavier elements, which make up much of the Earth, were formed originally by nuclear reactions in giant stars.

#### TUNISIA

48.	FR4-60108 (FY 75) Amend. 2	Duke U., Durham, NC	O.H. Pilkey	\$2,431
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Study of the sediments of the Lake of Tunis to obtain data contributing to plans to reverse the eutrophication of the lake--the imbalance of the nutrient levels caused by human and industrial pollution--and to contribute to a theoretical study predicting the results of the continued degradation of an environment.



## MUSEUM PROGRAMS

The scope of museum activities is growing and changing. The traditional museum role has been the care and preservation of scientific specimens and cultural objects for study and reevaluation as new techniques and data become available. Today museums also have a growing role in the transmission of man's cultural heritage to future generations, a role belonging traditionally to universities. Museums are now making more use of their skilled personnel and their collections for popular education.

Projects like those listed below, which received Smithsonian Foreign Currency Program support in FY 1975 and 1976, support both the traditional and the newer roles of museums. These projects respond to the needs of the museum profession which are not met within the framework of basic research in the natural sciences and cultural history which receives Smithsonian Foreign Currency Program support separately. Examples of these special museum needs include the conservation of irreplaceable objects of scientific, historic or cultural importance; the preparation and circulation of exhibits; the presentation of the performing arts and of the crafts of the world's peoples, a form of "living museology;" and the preparation of publications and films based on museum collections for all levels of formal and popular education.

<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
<b>BURMA</b>			
49. TA76-1 & 2 (FY 76)	Smithsonian Institution	C. Mydans & S. Mydans	\$368
Research for a descriptive article on the traditional dance rituals of Burma for publication in the <u>Smithsonian</u> magazine.			
<b>EGYPT</b>			
50. FR4-60107			
Amend. 1			
2, 3 (FY 75)			\$13,311
FR4-60107			
Amend. 5 (FY 76)	Smithsonian Institution	S.K. Hamarneh	\$714
Study of medieval arabic manuscripts in Egypt to obtain material for inclusion in a history of Islamic contributions to the development of medical science.			
51. TA75-230 (FY 75)			\$2,424
Amend. 1 (FY 76)	Smithsonian Institution	R. Rinzler	\$475
Folklore research in Egypt to identify and select folk artists and craftsmen to participate in special American Bicentennial programs in the United States illustrating the cultural traditions of immigrants to the United States.			



<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
52. TA75-180, 181 (FY 75)	Smithsonian Institution	A. Friendly & D. Kessel	\$1,730

Research for an article for the Smithsonian magazine describing the work in Egypt being undertaken with international support to save the ancient Temples of Philae from destruction by the waters of the Nile River.

#### INDIA

53. TA75-214, 215 (FY 75)	New York U.	D. Owens & L.J. Majewski	\$4,950
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Consultation by two leading American experts on the conservation of the world-renowned frescoes in the Ajanta Caves, urgently requested by the Indian Minister of Education.

54. TA 75-192 (FY 75)	Smithsonian Astrophysical Observatory, Cambridge, MA	J. Cornell	\$2,524
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Research in India for a publication on the accomplishments of private American universities and similar institutions working in association with the Smithsonian.

55. FR5-46229 (FY 75)			\$41,730
TA75-224, 225 (FY 75)	Theater in the Street, Inc. NY, NY	P. Reynolds	\$980

Research on the Indian traditions of street theater, including filming of actual performances, and gathering information on traditional dramatic themes, music, costume and mask design and other characteristics.

#### PAKISTAN - None

#### POLAND

56. TA75-47 (FY 75)	American Association for State and Local History Nashville, TN	W. Alderson	\$760
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Participation in a conference in Warsaw on the adaptation of historic buildings and other monuments to museum purposes.

57. TA75-72 (FY 75)	The Commission of Fine Arts, Washington, D.C.	D. Myer	\$1,260
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Participation in an ICOMOS (International Council on Monuments and Sites) and IUA (International Union of Architects) sponsored international seminar held in Poland on the problems of adapting contemporary architecture to surrounding historical structures.





<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
58. FR5-46237 (FY 75) Amend. 1 (FY 76)	National Archives Trust Fund Board, Washington, D.C.	A. Meisel	\$40,000 \$2,600
Preparation of an animated film in Poland that will provide information for the American public visiting the National Archives on the Archives' historical development and its major services.			
59. FR5-46227 (FY 75)	National Trust for Historic Preservation, Washington, D.C.	H. Gorska	\$30,659
Research on Polish methods of conservation and restoration of historic buildings and adaptation of these techniques to American needs.			
60. TA75-44 (FY 75)	Smithsonian Institution	E. Davidson	\$2,890
Support for the travel of a Polish entomologist to Washington to take up a postdoctoral fellowship at the Smithsonian Institution to do research on the North American <u>Tachysphex</u> , a variety of wasp.			
61. TA75-118 (FY 75)	Smithsonian Institution	M. Pachter	\$1,637
Preparation by the National Portrait Gallery of an American Bicentennial book of essays which will provide a perspective on the United States as viewed from abroad in the period from The American Revolution to the First World War.			
62. FR5-46224 (FY 75)	Smithsonian Institution	P. Perrot	\$53,349
Support for a Polish - American seminar on the organization of programs to preserve cultural monuments, buildings and other properties, and the technology required for such work.			
63. FR5-46244 (FY 75)	Smithsonian Institution	T. Reed & K. Loveland	\$52,000
Preparation of animated films in Poland that will provide visitors to the National Zoo in Washington with information on the evolutionary origins, the behavior and other aspects of lions, tigers, and other large cats.			
64. TA75-198 (FY 75) TA76-41, 42, 72 & 72 Amend. 1 (FY 76)	Smithsonian Institution	R. Rinzler	\$967 \$3,660
Folklore research in Poland to identify and select folk artists and craftsmen to participate in special American Bicentennial programs in the United States illustrating the cultural traditions of immigrants to the United States.			



<u>Obligation Number</u>	<u>Institution</u>	<u>Principal Investigator</u>	<u>\$ Eqv.</u>
55. TA75-76 & Amend. 1 (FY 75)	Woodrow Wilson International Center for Scholars Smithsonian Institution	J. Billington	\$921

Support for the travel of a Polish professor of international law to Washington to take up a year's fellowship at the Woodrow Wilson International Center for Scholars to do research on environmental protection and international law.

#### TUNISIA

66. P.O. 46233 (FY 75)	Smithsonian Institution	R. Rinzler	\$622
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Folklore research in Tunisia to identify and select folk artists and craftsmen to participate in American Bicentennial-related programs in the United States illustrating the cultural traditions of immigrants to the United States.



# GRANT ADMINISTRATION

	<u>Obligation Number</u>	<u>Institution</u>	<u>\$ Eqv.</u>
67.	SFG-2-0434 & Amend. 5 (FY 75)	Smithsonian Institution	\$58,843
Inspection and audit of research projects and liaison with host country governments and institutions by Smithsonian scientific advisory council members and by Smithsonian staff.			
68.	3300-51-01 Rev. (FY 75)		
	3300-61-01	Smithsonian Institution	\$41,496
	Rev. (FY 76)		\$20,589

Transfers to the Department of State for Shared Administrative Expenses. The State Department is seeking directly an appropriation for FY 1977 to cover these costs. As a consequence, \$19,000 equivalent has been deducted from the appropriation request of \$4,500,000 in excess foreign currencies which the Office of Management and Budget approved for the Smithsonian for this purpose.

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